

# ATLAS: A TOTAL LIBRARY AUTOMATION SYSTEM

Molly Chuah\*

**Abstrak:** Artikel ini menggariskan ciri-ciri/sifat-sifat penting perisian ATLAS (ATLAS library software package). Modul-modul yang diuraikan adalah MARION (MARC Information On-line), CIRCLE (Circulation Control for the Library Environment), ACQUIRES (Acquisition and Serials Control), OPAC (On-line Public Access Catalog), NIX (Newspaper Indexing) dan D-SIRE (Data Research System for Information Retrieval).

**Abstract:** The article outlines the main features of the ATLAS library software package. The modules described are MARION (MARC Information On-line), CIRCLE (Circulation Control for the Library Environment); ACQUIRES (Acquisition and Serials Control), OPAC (On-line Public Access Catalog), NIX (Newspaper Indexing) and D-SIRE (Data Research System for Information Retrieval).

ATLAS (A Total Library Automation System) is a fully integrated modular software package developed by Data Research Associates (DRA), encompassing real-time applications in cataloguing, circulation, acquisition and serials control, information retrieval and on-line public access. The version of ATLAS that will be installed in the University of Malaya Library (UML) is version 2.1 released in 1990. The main features of each ATLAS module to be installed in UML are as outlined below:

## MARION

The foundation of a library software package is usually a bibliographic database and as such the first ATLAS module developed in 1976 was MARION (MARC Information On-line) designed to build and maintain a database of bibliographic and authority information. The format for all record entry and retrieval in this module is the Library of Congress MARC format. It also supports the ALA character set, thus permitting the input and display of diacritics.

Initially, the creation of a database will involve the tape loading of records. The tape read program of MARION has proved useful in this respect as it has facilitated the loading of approximately 98,000 post 1982 records from UML's database maintained in MALMARC (Malaysian MARC) format to create UML's base database in MARION.

Bibliographic records can be transferred from a bibliographic utility such as OCLC, RLIN, WLN,

UTLAS or the Bibliofile terminal via the Screen Copy function - a feature that is expected to be relied on heavily in UML's retrospective conversion programme. Records selected can be viewed and edited before being written into the MARION database. For current cataloguing activity, this feature can be used to overlay on existing minimal record input by Acquisition, with the necessary details such as subject headings and class number to create a full bibliographic record.

The transfer of records is also possible in a network and this function is provided by the NET-CAT Utility. Searches may be made of a specific database or the default (local) database. Database searching is through mnemonic keys defined by the library, such as T = Title; A = Author, C = Call number and S = Subject. The Library is also given the flexibility in choosing the fields and subfields it wishes to index to permit retrieval. A record retrieved can then be edited before it is finally written into the local database and automatically indexed. The "Copy" command permits the user to store a record found without the holdings fields. The "Copy" command is also used for cataloguing new editions of work catalogued earlier by permitting copying and editing of stored data.

As for original cataloguing MARION facilitates data entry by permitting workforms to be created. No limit is placed on the number of workforms created and hence a library can have different workforms for different bibliographic formats. Data entry and editing functions are facilitated by a series of keypad commands.

---

\* Librarian, IPT, University of Malaya



The Authority control function supports MARC authorities format; permits multiple authority systems for subject headings such as the Library of Congress's, the Medical Subject Headings or local headings; allows a choice of whether or not to create cross-references; displays scope notes in the index list and cross-references in the On-line Public Access Catalog (OPAC). Authority records may also be loaded from tapes provided by vendors or transferred from bibliographic utility on-line. Global search and replacement of authority records are effected through the following three options: (1) A report of conflicts of headings is generated and the library uses this report to manually correct records. (2) The text of specified fields and subjects between fields 100 and 999 are changed globally and (3) Execution of global changes on-line or by batch programming.

Each bibliographic record is linked to an item record which represents a copy of a title. The number of item records that may be linked to a bibliographic record is unlimited. The creation of such an item record utilises the linking programs with the item ID entered by scanning the barcode number. Book and spine labels can also be printed, formatted either for the Library of Congress or Dewey call number. Other outputs available are printed catalog cards, bibliographies and COM catalogues.

This technical service module does provide the necessary functions to create and maintain a bibliographic database. However, data entry and authority control will be greatly facilitated through improvements such as the window facility and a cut and paste function which will permit extraction of records from the authority index to a record currently being input.

## **CIRCLE**

The other base module of ATLAS is the CIRCLE module. CIRCLE - (Circulation Control for the Library Environment) provides the necessary functions and services for circulation control in an academic library. A notable feature of CIRCLE is its ability to integrate with the other modules, for example, with MARION for access to bibliographic records. CIRCLE in turn provides real-time status information on each item which is drawn upon by the on-line public access catalog module.

The CIRCLE Policy File function enables a library to implement its circulation policies and procedures at a network, system, branch or

department level via an interactive matrix involving parameters such as material codes, loan periods, fines, and renewal. The patron database, into which standard information can be recorded for each borrower, can be accessed by predefined search keys such as name or library card number. For a cooperating system, the type which UML has opted for, only one patron database, accessible to all branch libraries, needs be set up.

The Borrower Services option provides functions such as the charge procedure which involves scanning the borrower's ID card, the barcode of the item to be charged and pressing the return key to end the process and produce date due notices if required. The system also makes item checks on an item's status and borrower checks to determine a borrower's active status, outstanding fines, items on hold and delinquencies. Discharge and renewal require simply the scanning in of a returned item's barcode. The item status is also checked and overdue fines are calculated and paid, waived or recorded.

The Patron Services function performs several important services on-line such as the display of demographic, circulation and delinquency information of a patron; the display of current status of a borrower's charged items; renewal when the borrower is not present; cancellation of a borrower's request, and replacement of lost library cards.

To facilitate collection management and use, the Circulation Services function has several options tailored to permit movement and status of items in the library. For example, loan period, permanent location of material can be changed; intra and inter-library loans can be transacted; books can be routed among agencies; items can be discharged when the borrower is not present and bad check-ins can be handled.

From the CIRCLE menu, access to the bibliographic database and item record is possible through the bibliographic services option. For each selected record, the full MARC format may be viewed together with its holdings and item status. A staff can then place or cancel requests for borrowers and flag items for recall.

A submodule of the CIRCLE module is the reserve book room function designed for the management of a library's reserve book room collection. The Reserve Book Room database has



additional information such as the lecturer's ID, name, address, purge date, loan period, location and fine type. The search option provides access through search keys which include item ID, lecturer's ID, course name and title of book. Charge and discharge functions are effected through the reserve book room charge option which is similar to the CIRCLE functions. However, the submodule's policy file permits the setting up of six different fine structures which may be hourly or daily with fixed or sliding rates. This submodule interacts with other modules of the ATLAS system. Information that an item is added to this collection will be displayed in all other programmes including OPAC. Similarly a purge programme can be activated to check purge date, and delete records which will no longer be displayed.

There is also the AV Materials Booking System which relies on CIRCLE databases and functions such as the patron database, bibliographic services, Policy File, Charge/Discharge function and Circulation Services function to handle collection management and circulation of audio-visual materials. A very necessary supportive module especially in a system with heavy transaction load is the Off-line Backup Circulation (OBC) System which is activated when the system is down. The OBC records charges, discharges and renewals onto a storage device. These transaction data are later transferred to the host computer, updating both patron and item files.

The CIRCLE module has a range of functions and services to cater for circulation control of a wide variety of materials. Its interaction with the other modules means that every function can be performed with up-to-date information.

## **ACQUIRES**

The Acquisition and Serials Control module (ACQUIRES) provides various functions for automating procedures and tasks related to the acquisition of all types of materials. Information required by different functions of ACQUIRES is stored in a common policy file. This file contains data such as library address records, code translations, notice texts, general defaults for ordering materials, currency codes with conversion rates, the notice texts and notice intervals for checking in subscription through the Serials Program.

Pre-order searching of requested title is first done on the library's common bibliographic

database. New records may be transferred from Bibfile in a terminal-to-terminal process. Records may also be added using the original cataloguing function, Record Editor. Brief records are created on either formatted worksheets (i.e. with labelled fields or unformatted worksheets, i.e. tags and indicators entered by user. These brief records may then subsequently be updated by cataloguing using bibliographic transfer process.

Another important file is the supplier file which contains the vendor address, claim, cancellation and payment requirements of each vendor. This file is involved when creating purchase orders and sending out claims and cancellation.

Audit trail for each fund is dynamic. For each fund there is a record in the fund accounting file. Each fund is given an identification code which may be set up to allow nesting up to ten levels, thus permitting reports on encumbrances and expenditure up to a specific subject area. An on-line report of each fund is available, with real time updates.

There is an optional material selection feature which enters requests for titles, prepares them from request lists and maintains gifts and exchange lists. This selection list may subsequently be accessed by the library for ordering purposes.

The ACQUIRES report generator produces reports and notices from master records for the vendor, account file and orders. The text of each notice, such as the claim or cancellation notices is tailored by the library. Various reports are also available for selection lists, fund accounting, ordering and receipt functions. The type of reports, the information to be included and the display format are left to a library to customise, depending on its needs.

## **SERIALS CONTROL**

This function performs ordering, check-in, claims and cancellation. Check-in of issues may be via ISSN, or any access points in the bibliographic record. From the frequency information and the numbering scheme entered in a subscription record, the system is able to predict which issue is expected next.

When an issue is checked in, the holdings information is immediately updated. Holding information may be displayed in a summary or detailed form in this module and in OPAC. Serial numbering may conform with NISO or local display formats.



Claims, cancellation and renewal notices are generated at intervals established by individual libraries. Management reports are produced on subscription held, titles to be renewed, issues to be claimed and claims, renewal and cancellation notices, listed by vendor.

## OPAC

ATLAS's On-line Public Access Catalog can be accessed by users to (i) search the bibliographic database; (ii) tap full-text databases using keyword and Boolean strategy; (iii) read the library electronic bulletin board; and (iv) access the Information and Referral files.

Four different types of search strategies are available. For all four modes searches can be made on author, title, subject and other indexed fields. Each search mode also permit qualification by media and date. The browse strategy allows users to search the catalogue in response to system prompts. The direct look-up method allows a user to fill in the necessary information against a displayed field name. In the command language search the user types in both the command and the field data. The most sophisticated mode is the keyword and Boolean mode which allows a user to structure his search using operators such as AND, OR, NOT, ADJACENCY, NEAR, and nested parenthesis. Search can be on any specific indexed field in the MARC record including the Notes and Contents fields. To assist users, each of these access modes is accompanied by help screens and on-line tutorials.

Display format is consistent with labeling of information in words instead of acronyms. Separate screens can be defined for branch libraries within a consortium. There is an option to display local or network holdings, and "on order" and "in process status" of items.

## NIX

The Newspaper Indexing (NIX) module is used for the indexing of newspaper and periodical articles. It is designed to facilitate the compilation of printed indexes rather than for public online access.

First an index arranged by alphanumeric or numeric code reflecting all possible subject, personal name or obituary heading has to be established. A list of newspapers and periodicals to be indexed has also to be drawn up and a

name code assigned to each title. Annotations of up to 111 character are then entered attached with the appropriate newspaper title code, date of publication, newspaper section and heading code or codes.

From this module a variety of listings and output may be generated. These include current headings and cross-reference records; subject headings with corresponding annotations and cross-references. Headings, cross-references and annotation may also be produced in tape form to be used to produce a computer-typeset index.

## D-SIRE

To provide a more sophisticated information retrieval capability, UML has also subscribed to a third-party package D-SIRE (Data Research System for Information Retrieval). This package allows one to access a variety of information such as full-text databases and community services information. Search may be in natural language mode or a structured mode using Boolean operators and nested parameters. Output retrieved may then be ranked. D-SIRE indexing counts the number of times a given keyword or search string appear and assigns a numerical value. This indicator helps one to evaluate the usefulness of references found and consequently indicate whether search strategy ought to be maintained or changed.

## Conclusion

With all reasonable expectations that the installation of the ATLAS system in UML will proceed according to the schedule as outlined by Mr. Teh Kang Hai in his article, the main modules of ATLAS should be running by the end of 1991. Hopefully the setting up of ATLAS will enable the Library to play a more effective role in meeting the informational needs of the academic and student community of the University of Malaya.

## Reference

1. *Acquisition and Serials Control*. St. Louis: Data Research Associates, n.d.
2. *Cataloguing and Authority Control*. St. Louis: Data Research Associates, n.d.
3. *Circulation Services*. St. Louis: Data Research Associates, n.d.
4. *The Power of ATLAS*. St. Louis: Data Research Associates n.d.